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**Information Cited by the Applicant(s) that may be Material  
to the Prosecution of the Subject Application**

Re: Application Serial No. 10/016,272

Applicants: Wayne D. Grover; John Doucette

Title: **TOPOLOGICAL DESIGN OF SURVIVABLE MESH-BASED TRANSPORT  
NETWORKS**Art Unit: ~~2681~~ 2666

Examiner: Unknown

Filed: November 2, 2001

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**United States Patent Documents**

Examiner <u>Initial</u>	<u>ID</u>	Document <u>Number</u>	<u>Date</u>	<u>Name</u>	<u>Class</u>	Sub <u>Class</u>
<u>pr</u>	A1	5,850,505	12/15/98	Grover et al.	395	182.02
<u>pr</u>	A2	6,377,543 B1	04/23/02	Grover et al.	370	227
<u>pr</u>	A3	6,052,796	04/18/00	Croslin	714	4
<u>pr</u>	A4	6,421,349 B1	07/16/02	Grover (Corresponds to C3 listed below)	370	408
<u>pr</u>	A5	6,404,734	06/11/02	Stamatelakis (Corresponds to C5 listed below)	370	227
<u>pr</u>	A6	2002/0071392	06/13/2002	Grover et al. (Corresponds to C11 listed below)	370	241
<u>pr</u>	A7	6,154,296	11/28/2000	Elahmadi et al.	259	119

**Other Information**

(Include author, title, date of publication to extent known, relevant pages, and place of publication if known)

Examiner

Initial IDDocument Identificationpr C1A photocopy of Canadian Patent Application No. 2,161,847, filed October 31, 1995  
(published May 1, 1997), including drawings and filing certificate, 32 pages.



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- pk* C2 A photocopy of Canadian Patent Application No. 2,212,933, filed August 13, 1997 (published February 13, 1999), including drawings and filing certificate, 154 pages.
- pk* C3 A photocopy of Canadian Patent Application No. 2,210,207, filed July 11, 1997 (published January 11, 1999), including drawings and filing certificate, 93 pages. (Corresponds to A4 listed above.)
- pk* C4 A photocopy of Canadian Patent Application No. 2,269,649, filed April 22, 1999 (published October 22, 2000), including drawings and filing certificate, 21 pages. (Corresponds to C8 listed below.)
- pk* C5 A photocopy of Canadian Patent Application No. 2,280,981, filed August 27, 1999 (published April 6, 2000), including drawings and filing certificate, 22 pages. (Corresponds to A5 listed above.)
- pk* C6 A photocopy of Canadian Patent Application No. 2,285,101, filed October 6, 1999 (published April 8, 2000), including drawings and filing certificate, 38 pages. (Corresponds to C9 listed below.)
- pk* C7 A photocopy of Canadian Patent Application No. 2,307,520, filed April 28, 2000 (published October 29, 2000), including drawings and filing certificate, 131 pages. (Corresponds to C10 listed below.)
- pk* C8 A photocopy of U.S. Patent Application No. 09/314,518, filed May 19, 1999, including drawings and filing certificate, 21 pages. (Corresponds to C4 listed above.)
- pk* C9 A photocopy of U.S. Patent Application No. 09/414,474, filed October 7, 1999, including drawings and filing certificate, 38 pages. (Corresponds to C6 listed above.)
- pk* C10 A photocopy of U.S. Patent Application No. 09/561,355, filed April 28, 2000, including drawings and filing certificate, 125 pages. (Corresponds to C7 listed above.)



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<u>Initial</u>	<u>ID</u>	<u>Document Identification</u>
<u>JS</u>	C11	A photocopy of Canadian Patent Application No. 2,359,168, filed October 16, 2001, including drawings and filing certificate, 51 pages. (Corresponds to A6 listed above.)
<u>JS</u>	C12	"Protection Cycles in Mesh WDM Networks", Ellinas, G, Hailemariam, A. G., Stern, T. E.; <i>IEEE Journal on Selected Areas in Communications</i> , Vol. 18, No. 10, October 2000.
<u>JS</u>	C13	"MENTOR: an algorithm for mesh network topological optimization and routing", G. Grover, A. Kershenbaum, P. Kermani, <i>IEEE Transaction on Communications</i> , Vol. 39, p. 503-513, 1991.
<u>JS</u>	C14	"Algorithms for the Spare Capacity Design of Mesh Resorable Networks", B. D. Venables, M.Sc. Thesis, University of Alberta, Edmonton, 1992.
<u>JS</u>	C15	"Optimal capacity placement for path restoration in STM and ATM mesh-survivable networks", R. R. Iraschko, M. H. MacGregor, W. D. Grover, <i>IEEE/ACM Transactions on Networking</i> , Vol. 6, No. 3, pp. 325-336, June 1998.
<u>JS</u>	C16	"Near optimal spare capacity planning in a mesh restorable network", W. D. Grover, T. D. Bilodeau, B. D. Venables, <i>IEEE Globecom '91</i> , pp. 2007-2012, 1991.
<u>JS</u>	C17	"A fast heuristic principle for spare capacity placement in mesh-restorable SONET/SDH transport networks", <i>Electronics Letters</i> , Vol. 33, No. 3, pp. 195-196, Jan. 30, 1997.
<u>JS</u>	C18	"Two strategies for spare capacity placement in mesh restorable networks", B. D. Venables, W. Grover, M. H. MacGregor, <i>Proceedings of the IEEE ICC '93</i> , Geneva, pp. 267-271, May 1993.
<u>JS</u>	C19	"Comparative methods and issues in design of mesh-restorable STM and ATM networks", W.D. Grover, R.R. Iraschko, Y. Zheng, <i>Telecommunication Network Planning</i> , pp. 169-200, editors: B. Sanso and P. Soriano, Kluwer Academic Publishers, 1999.



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Examiner

Initial ID Document Identification

- pk* C20 "A self-healing network with an economical spare-channel assignment", H. Sakauchi, Y. Nishimura, S. Hasegawa, *Proc. IEEE Globecom*, (1990) pp 438-443.
- pk* C21 "An optimal spare-capacity assignment model for survivable networks with hop limits," M. Herzberg, and S. Bye, *Proc. IEEE GLOBECOM '94*, pp. 1601-1607, 1994.
- pk* C22 "Distributed self-healing network and its optimum spare capacity assignment algorithm", Chujo, T., Komine, H., Miyazaki, K., Ogura, T., Soejima, T., , *Electronics and Commun. in Japan*, part 1, vol. 74, no. 7, 1991, pp. 1-8.
- pk* C23 "A unified approach to network survivability for teletraffic networks: models, algorithms and analysis", D. Medhi, *IEEE Trans. on Communications*, vol.42, 1994, pp.534-548.
- pk* C24 T. Cinkler, T. Henk, G. Gordos, "Stochastic algorithms for thrifty single-failure-protected networks", in *Proc. Design of Reliable Communication Networks*, Munich, Germany April 2000, pp. 299-303.
- pk* C25 Y. Wang, *Modelling and solving single and multiple facility restoration problems*, Ph.D. dissertation, Sloan School of Management, MIT, June 1998., pp.32-33.
- pk* C26 W.D. Grover, "Distributed Restoration of the Transport Network", in *Network Management into the 21st Century*, editors T. Plevyak, S. Aidarous, IEEE / IEE Press co-publication, Chapter 11, pp. 337-417, Feb. 1994.
- pk* C27 W.D. Grover, "Self-organizing Broad-band Transport Networks", *Proceedings of the IEEE Special Issue on Communications in the 21st Century*, vol. 85, no.10, October 1997, pp. 1582-1611.
- pk* C28 Y. Xiong; L.G. Mason, "Restoration strategies and spare capacity requirements in self-healing ATM networks" *IEEE/ACM Transactions on Networking*, Volume: 7 Issue: 1, Feb. 1999, pp. 98 -110.



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Examiner

Initial ID      Document Identification

- [initials]* C29 J. L. Kennington, M.W. Lewis, The Path Restoration Version of the Spare Capacity Allocation Problem with Modularity Restrictions: Models, Algorithms, and an Empirical Analysis, *Technical Report 98-CSE-13*, Department of Computer Science And Engineering, Southern Methodist University, Dallas, December 1998.
- [initials]* C30 Rainer R. Iraschko, "Path Restorable Networks", PhD Thesis, University of Alberta, chapter 4, pp. 56-85, Fall 1996.
- [initials]* C31 M. H. MacGregor, W. D. Grover, "Optimized  $k$ -shortest-path Algorithm for Facility Restoration", *Software-Practice and Experience*, Vol. 24, No. 9, September 1994, pp. 823-834.
- [initials]* C32 I. Saniee, "Optimal Routing Designs in Self-Healing Communications Networks", *Bellcore, MRE 2D-362*, May 1994, 10 pages.
- [initials]* C33 "Introduction to SONET Networking", NORTEL tutorial handbook, Oct. 30, 1996.
- [initials]* C34 R.R. Iraschko, M.H. Mac Gregor, W.D. Grover, "Optimal Capacity Placement for Path Resoration in Mesh Survivable Networks", IEEE, 1996, pages 1568 – 1574.
- [initials]* C35 G.N. Brown, W.D. Grover, J.B. Slevinsky, M.H. MacGregor, "Mesh/Arc Networking: An Architecture for Efficient Survivable Self-Healing Networks" IEEE Int'l Conference on Communications, May 1-5, 1994, pages 471 – 477.
- [initials]* C36 W.D. Grover, "Network Survivability: A Crucial Issue for the Information Society", IEEE Canadian Review, No. 27, Summer 1997, pages 16 – 21.
- [initials]* C37 W.D. Grover, D. Stamatelakis, "Cycle-Oriented Distributed Preconfiguration: Ring-like Speed with Mesh-like Capacity for Self-planning Network Restoration.", Proceedings of IEEE ICC 1998, 7 pages.



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[Examiner: Initial if reference considered, whether or not citation is in conformance with M.P.E.P.; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant]